Research and education at the age of large-scale data bases

Alain-Marc Rieu

Alain-Marc Rieu
Professor, Department of Philosophy, University Jean Moulin - Lyon 3
Senior Research Fellow, East Asian Studies Institute (CNRS UMR 5062), ENS-lsh
Eml: amrieu@gmail.com

January 5, 2006

Research & Education in the age of large-scale data-bases

Fukuta Azio (ed.), *What are nonwritten cultural materials?,* Kanagawa University COE Program Center, 2006, p 167-171.

The possibility and the need to develop research and education based on non-written materials introduce a major evolution in advanced societies with strong consequences in Human and Social Sciences.

Non-written materials can be compared to the amount of black matter in the universe: 90% of all materials. They encompass practices and techniques from non-modern societies to popular culture, music, TV, film or news in post-industrial societies. Digital technology has opened the capacity of recording, storing this information in large-scale databases and also of making this information available on the Internet. These databases are similar to the role played today by museums. But they will soon be so huge and diversified that they will become a global on-line Museum. Digital technology is also recording and storing written materials in large-scale date bases available on the Internet.

We are therefore witnessing the convergence of the museum and the library, of the two institutions historically dedicated to the collection, storage and communication of information. Soon, like the Chinese map drawn for the Emperor in Borgès's tale, we will not be able to know if we are in the global web-based museum or in the real world. There will not be a clear demarcation between the two: everything happening will immediately be recorded and made available on the web. As Jean Baudrillard or Paul Virilio have explained, everything will be "live" and "recorded before" at the same time. We understand better today what this really means: digital technology is generating an *immersive* environment by becoming the immaterial infrastructure of all communication. This is a major anthropological mutation.

It is necessary to debate the consequences for research and education. What are we going to do with this wealth of new materials? The problem is not to store

and search, to find the best "search engine", the perfect Google. The problem is not to *search* but to *research*. How are we going to learn and to teach? The basic questions then are: how do we think in this context? What is thought and what is knowledge in the age of large-scale databases? These questions open a debate on the role of the university.

In universities and other educative institutions, digital technology is expanding the range of teaching and learning materials to non-written information This evolution is transforming the theory and practice of knowledge, in particular the role of writing and of the printed media. What is the interaction between "writing" and non-written materials? What becomes "writing" at the age of large-scale databases? We already have some experience of these issues. Robert Coover, for instance, has already raised similar problems. In his June 1992 essay in the *New York Times*, "The end of books", R. Coover explored how the interaction of literature with "hypertext" was opening the capacity to transform the usual conception and reception of narratives by the construction of computer-based non-linear and non-sequential texts. This capacity itself had already been explored by avant-garde literature since the early 20th century as well as by filmmaking and video. What is new in these experiments is the introduction of a "random (i.e. non human) variable" by a machine (i.e. a computer). At Brown University, Robert Coover developed an experimental multi-media environment, "The cave", where literature merges with sonic and visual arts. This is again a technological implementation of a 20th century avant-garde program. Large-scale multi-media databases expand these potentials far beyond art and literature. It reshapes the study of Man and Society. It reshapes Human and Social Sciences.

The convergence of non-written and written materials, of *materials* and *immaterials*, is an evolution transforming from inside the societies in which both these artistic experiments and these technological innovations have developed. This evolution has now opened up a mutation. Beyond the way we transmit and communicate information, this mutation starts transforming the way *we* learn and teach. This evolution starts to transform a major institution in our societies: the university.

Since the emergence of the modern university in the 19th century, research and teaching have been based on written documents because of their material support, print, namely books. Print is a technology to store and transmit writing,

which might be replaced in the near future by digital technology. But writing is the support of thought; print only the support of writing. What will writing become beyond print? Will print disappear or develop new relations with image and sound? Will books recede or will "book" become the name given to digital-based multimedia works? Books indeed might extend and then exist beyond paper. So the changing role of print might strengthen the importance of writing. It might then change the present conception of writing. In a digital environment where printed materials, images and sounds are intertwined, this new type of information processing will change culture. It will also change knowledge.

Non-written and printed materials will become multimedia materials in a different conception and practice of thought and knowledge, of research and education. Writing is generally considered as the expression and transcription of thought, of thinking in general. As Jacques Derrida formulated, "thinking" is beyond print. It is a process and a practice, which disarticulates and rearticulates information and data in a different or new way, opening new configurations, shapes and constructions, traditionally called "knowledge", i.e. "interpretation", "meaning" or "theory" according to the type of work. For instance, computer-based simulations are a typical reconfiguration of data in a work of thought.

Writing (*écriture*) is thought at work. This work of thought called "writing" will not disappear in multimedia environments. Due to the quantum leap in the quantity and diversify of information stored and made available, it will on the contrary become even more important. Societies will need more and more *knowledge traders* of various expertise. The risk is that information flows through individuals and groups without added value, like entertainment, with a low level of knowledge. When digital media become the infrastructure of all communication, this is a major risk for societies and educational systems. Once more, we have some experience with these problems to be able to find solutions: since the 1980ies, various studies define museums as "learning environments", as offering a "learning experience", informal but still organized though the construction of exhibitions and exhibits. The same can be said for computer games. It is possible to infer from museums and games to multimedia environments.

In conclusion, I do not believe we are entering the age of entertainment. Underneath the formation of the global on-line Museum, the changing role of

Research and Development generates a “Knowledge Society”. This is a collective process we still need to think and construct.

Personal bibliography on these questions and issues:

1. On Museum Studies:

- "Musée et Université: vers l'émergence d'une nouvelle fonction sociale", in *Nouvelles Muséologies*; Marseille, Muséologies Nouvelles et Expérimentation Sociales, 1985, p 103-107.
- *Les visiteurs et leurs musées*, Paris, La documentation française, 1988, 225 p.
- "Le musée comme environnement complexe"; *Bulletin des Conservateurs des musées et collections publiques*, 1988, n° 180-181. Trad. tchèque, Prague: revue *Muzeum*, printemps 1991.
- *La question de la culture face aux mutations scientifiques, techniques et industrielles*; Rapport pour la Région Alsace, Strasbourg 1989, 32 p.
- article "Musée"; *Encyclopédie philosophique universelle*; *Les notions*; Paris: P.U.F., 1990.
- "Les êtres esthétiques de Donald Judd ou le paradoxe de la chambre froide", Strasbourg, revue *Correspondances*, n° 3, 2° semestre 1990.
- "Penser et gérer le musée: quelques éléments d'ingéniérie culturelle", Tokyo, *Nichifutsu Bunka,* n° 55, mars 1992, p 37-61.
- article "Musée"; *Dictionnaire encyclopédique et critique de la communication*; Paris: P.U.F., 1993; tome 2, pp 1508-1514.
- "Pour introduire en muséologie la notion de réseau", Rapport *Economie muséale*, Paris, Ministère de la Culture, mars 1993.

2. On Information and Communication Technology in culture and society:

- "La pensée et son double: penser l'informatique et pensée informatique"; revue *Milieux*, n° 30, automne 1987, p 44-53.
- *La techno-science en question*, Seyssel, Editions Champ Vallon, 1990 (with F. Tinland & Ph. Breton).
- "Information Technology and the transformation of mass societies: Information Society today", Tokyo, *Keio Communication Review*, n° 19, March 1997, pp 85-100.
- "The epistemological and philosophical situation of Mind Techno-Science", dans Stefano Franchi and Güven Güzeldere (ed.), *Mechanical Bodies, Computational Minds. Artificial Intelligence from Automata to Cyborgs*, Cambridge, M.I.T. Press 2005, p 453-470.